Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A method of identifying a polypeptide, which method comprises the steps of

(a) derivatizating, in an aqueous solution, the N-terminus of the polypeptide, or the N-termini of one or more peptides of the polypeptide, with at least one acidic reagent containing a sulfonyl moiety coupled to an ester moiety to provide one or more peptide derivatives, which reagent exhibits a half-life in aqueous solution of not less than 10 minutes at room temperature, to prepare one or more derivatives;

(b) analyzing at least one said derivative using a mass spectrometric technique to provide a fragmentation pattern; and

(c) interpreting the fragmentation pattern obtained to identify the polypeptide.

Claim 2 (original): The method according to claim 1, wherein the acidic reagent has a pKa of less than about 2 when coupled to the polypeptide.

Claim 3 (original): The method according to claim 1, wherein the mass spectrometric technique used in step (b) is matrix-assisted laser desorption ionization (MALDI) mass spectrometry.

Claim 4 (original): The method according to claim 1, wherein the mass spectrometric technique used in step (b) is electrospray ionization (ESI).

Claim 5 (original): The method according to claim 1, wherein in step (c), the fragmentation pattern is interpreted using a software program or database.

Claim 6 (original): The method according to claim 1, wherein all the steps are conducted as part of an automated or semi-automated procedure.

Claim 7 (previously presented): The method according to claim 1, wherein the acidic reagent includes an N-hydroxysuccinimide (NHS) ester.

Claim 8 (original): The method according to claim 7, wherein the reagent comprises a 3-sulfopropionic acid N-hydroxysuccinimide ester.

Claim 9 (original): The method according to claim 7, wherein the reagent comprises a 2-sulfobenzoic acid N-hydroxysuccinimide ester.

Claim 10 (original): The method according to claim 1, wherein the polypeptide has been obtained by enzymatic digestion.

Claim 11 (original): The method according to claim 10, wherein the enzyme is trypsin.

Claim 12 (original): The method according to claim 1, which further comprises a step of protecting lysine residues prior to the derivatizating step.

Claims 13–14 (cancelled)

Claim 15 (original): A kit for identifying a polypeptide by a mass spectrometric technique, which kit comprises at least one acidic reagent comprising a sulfonyl moiety coupled to an activated acid moiety in a container, which reagent exhibits a half-life in aqueous solution of not less than 10 minutes, preferably not less than about 20 minutes and most preferably not less than about 30 minutes at RT.

Claim 16 (original): The kit according to claim 15, wherein the reagent has a pKa of less than about 2 when coupled to the polypeptide.

Claim 17 (original): The kit according to claim 15, wherein the mass spectrometric technique is matrix-assisted laser desorption ionization (MALDI) mass spectrometry.

Claim 18 (original): The kit according to claim 15, wherein the mass spectrometric technique is electrospray ionization (ESI).

Claim 19 (original): The kit according to claim 15, wherein the activated acid moiety is an N-hydroxysuccinimide (NHS) ester.

Claim 20 (original): A kit according to claim 19, wherein the NHS ester is selected from the group consisting of 3-sulfopropionic acid N-hydroxysuccinimide ester and 2-sulfobenzoic acid N-hydroxysuccinimide ester.